Turbulent times for urban nature: conserving and re-inventing nature in Australian cities

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ABSTRACT

Interest in urban nature has grown rapidly over recent years in Australia, and not just amongst ecologists and conservationists. Policy makers, social scientists, community groups, the media and urban residents in general have also begun to think about, represent and interact with the 'natural' elements of cities in new ways. There has been a proliferation of perspectives about urban environments and a proliferation of debates about the sustainable management of animals, plants, water, climate and landscapes in cities. Such debates are indicative not only of an unsettling of the terms of nature in Australia, but also of an unsettling of the terms of Australian society by global social flows. Having placed Australian cities in the context of such turbulence, this paper considers implications of the contested status of urban nature for the practice of nature conservation. It is argued that as they engage with the ideas, values and behaviours of urban residents, nature conservation professionals will be challenged to broaden their understanding of nature conservation and to question the present dominance of the goal of biodiversity conservation.

Key words: Urban nature, urban ecology, urban wildlife, nature conservation, political ecology, sociology of nature, public attitudes

Introduction

This paper takes as its starting point a recent confluence of ecological and sociological interest. The result of attempts to recast the nature of nature in the city, this confluence is generating turbulence within the physical and social sciences, and in the ways they interact with each other.

We mark this confluence with the name, 'urban nature', aware that some may find this phrase to be a contradiction in terms. The assumption that culture and nature occupy different dimensions of reality has long had a strong presence in Australian society and makes of the idea of urban nature an oxymoron (Seddon 1997). Yet the terms of nature and the social movements organised around them have begun to shift, and with a speed that has accelerated over the past two decades. Environmental concern has diffused into the social mainstream, where it has given rise to a growing array of potentially conflicting 'environmentalisms' (Pakulski and Tranter 2004). The physical and intellectual barriers that would separate culture and nature—including those that would keep apart city and wilderness—are being breached, despite attempts to shore them up. Debates about everything from gene technology and green technology to the aesthetics of gardening and the politics of companion animals are becoming sites for cultural contests about the idea of nature itself.

In this paper, we maintain a broad focus on questions of urban nature. We do not take urban nature to refer only to particular organisms—owls and not worms, for instance—or to particular areas of a city—such as 'greenspace'. Nor do we advocate "the importance of integrating nature into the city" (Low et al. 2005, 73). Rather, we resist the suggestion that a city can be thought of as existing outside nature in the first place. We consider the terms 'urban nature' and 'city' to be coextensive; they name the same thing, but in different ways. The question is not whether cities include nature, or whether they enable contact between humans and nature, but *how* they do this.

Every city is an embodiment of ideas about and desires relating to nature. The task we take up in this paper is to show that such ideas and desires are in the process of being unsettled and reformed in Australian cities, with direct implications for urban environmental management. More broadly, this process has the potential to open the founding assumptions and values of nature conservation professions to new forms of public debate. Such debate will demand of nature conservation professionals a willingness and an ability to advocate their vision of nature conservation on more than scientific terms. It is also likely to see the status of biodiversity conservation as the basis for the management of nature challenged as urban residents give expression to a complex cultural enthusiasm for urban nature. The paper is in three parts. Part I, introduces questions of urban nature as a prompt for new ways of thinking about Australian cities. Part II, presents evidence that everyday experience of urban nature is being unsettled in Australian society. Part III, considers the implications of the renegotiation of urban nature for nature conservation in Australia.

I. Turbulent Cities

Today's Australian cities can be thought of not just as fixed places, but also as sustained events that mix together human and non-human beings, ecological and technological products, global and local scales, vernacular and cosmopolitan cultures, actual and virtual realities. Consider, for example, Kim Dovey's (2005) excellent study of Melbourne, *Fluid City,* which traces the global flows of capital that unsettled and reformed Melbourne's urban waterfront between 1983 and 2003. The picture that emerges is not so much of a place transformed by money but of new alignments between power and desire in Australia's cities. Dovey (2005, 23) notes that "the attractions of water and the productions of desire on the waterfront have not and will not be fully explained as arbitrary social constructions." The point here is twofold. First, the relationship between human desire and nature reaches down into the biological reality of the human organism. Second, this relationship is just as much in play in cities as it is in areas deemed more natural, such as wilderness. Yet, despite this acknowledgement, Dovey pays little attention to urban nature in the transformation of Melbourne he describes. This absence reflects the wider neglect of nature, ecology and the 'human animal' in the disciplines of urban planning and theory.

More generally, however, in social science disciplines such as geography and sociology, this neglect has come in for sustained criticism over the past fifteen years (Braun and Castree 1998; Macnaghten and Urry 1998). Building on these earlier efforts, Australian scholars have recently begun to explore nature-culture relations in urban environments (Davison 2005; Franklin 2002; Head and Muir 2005; Hogan 2003; Power 2005). This research has yet to consider how the re-imagination of urban nature may lead to a thoroughly new urban theory and practice in Australia, although such re-imagination is underway in North America and Europe (Desfor and Keil 2004; Hinchcliffe et al. 2005; Kaika 2005; Wolch 2002).

Consider, for example, the American animal geographer Jennifer Wolch's account, with colleagues, of 'transspecies urbanism'. These authors argue that modern urbanisation results in alienation from wild nature that, in turn, has "fuelled a resurgent biophilia" (Wolch et al. 1995, 736). The 'biophilia', or love of nature, associated with modern urban experience is fundamentally ambiguous. On the one hand, it has led to forms of romanticisation of wild animals and wilderness suited to appropriation in new forms of eco-consumerism. On the other hand, it has led to forms of political and ethical activism around concerns ranging from biodiversity protection to animal rights, in the process exposing deep divisions between different forms of environmental concern. In a more recent essay, *Anima Urbis*, Wolch (2002, 722, 726) extends this analysis of urban biophilia by drawing upon "new approaches to ethics and social theory [that] have blurred the human-animal divide" to introduce "new ideas about nature as agent". Following Wolch, yet also broadening her focus on urban wildlife to include all organisms and the living systems of which they are a part, it becomes clear that urban nature as well as urban culture needs to be understood as a source of purposeful and adaptive action. Far from being a passive background on which human ideas and desires are played out, urban nature itself plays an important role in the creation and evolution of these desires. Interest in the agency of urban nature unsettles the idea that cities are the product of human agency alone. Such interest thereby increases possibilities for understanding cities as sites for on-going dialogue between humans, non-humans and living systems.

To return to Dovey's study, it is possible to understand the transformation of Melbourne's industrialised waterfront into a lure for tourism, leisure and prestige as, at least partly, the result of the ambiguous potential of urban biophilia to redefine the relationship between human desire and the agency of nature in urban Australia. Consider the sentiments of then Victorian Premier, John Cain, as he linked, in 1989, the redevelopment of Melbourne's waterfront to a reunion with nature:

> [W]ater, in its soft, lapping, lake-like condition, symbolizes the mother – that to which most of us want to return. For those who don't want to, water, in its torrential or stormy aspect, also symbolizes the father. So whichever way you look at it, this development is going to be a very significant re-bonding experience. It will reunite Melbournians with their eternal mother – and on rough days with their father (cited in Dovey 2005, 23)

That such sentiment is more resonant of deep ecologists than of developers is not as surprising as it first seems, for political leaders are often astute in reading flows of public desire. Yet this desire stimulates not only a variety of moral concerns for nature but also the consumption and reconstitution of nature.

This ambivalence highlights the social reality that there is, in effect, no single urban nature. There is an array of contested urban natures. Seen in this light, scientific discourses of nature conservation are inherently political. Using ideas such as endemism, biodiversity and ecosystem services, conservation scientists and managers advocate the importance and primacy of one particular version of urban nature. Their task is to convince society at large that this version of urban nature deserves conservation and restoration; that it is more valuable than any other. The question is, as Wolch (2002, 737) observes in her reflection on "the vibrant network of grassroots action groups" that has developed around urban nature in her home state of California: "What kinds of urban nature …, and whose nature, will eventually emerge from such political ecological dynamics?" We carry this question with us into the next section to explore some of the changing networks that have recently begun to transform the political ecology of urban nature in Australia.

II. Urban nature in flux

After a long history of neglect, the subject of urban ecology is now firmly on the Australian research agenda. Over the last few years, several Australian universities have established research programs under headings such as urban ecology, suburban wildlife, urban biodiversity planning and urban habitats that are attracting significant funding. Reflecting this research effort, the 2004 conference of the Australian Ecological Society included a symposium on 'The Ecology of Urban Environments'. The same year, the Royal Zoological Society of New South Wales produced a collection of papers entitled *Urban Wildlife: More than Meets the Eye* (Lunney and Burgin 2004b). In 2005, the BioCity Centre for Urban Habitats published a comprehensive edited collection on the ecology of Adelaide (Daniels and Tait 2005) and an Australasian Urban Ecology Research Colloquium was held in Queensland. That this interest in urban ecology is spilling over into popular science writing about Australian ecology can be seen in Tim Low's (2002) *The New Nature: Winners and Losers in Wild Australia,* Tim Flannery's (2000; 2002a) *Anthologies on the environmental and social history of Sydney and Melbourne*, and the inclusion of a chapter on cities in Mike Archer and Bob Beale's (2004) *Going Native: Living in the Australian Environment*.

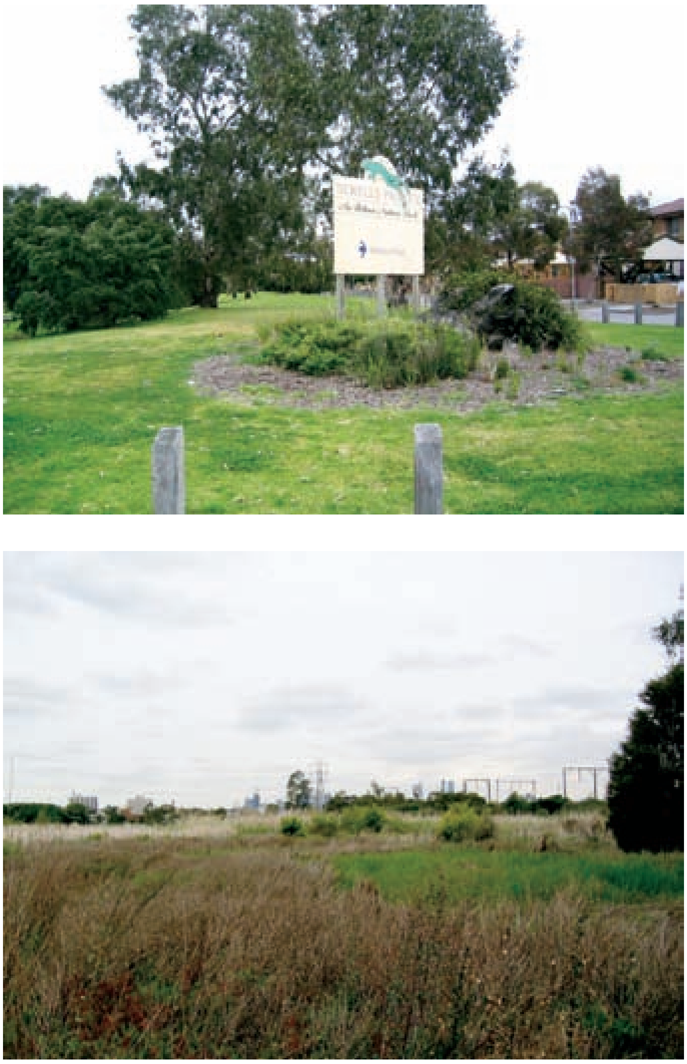

Figure 1 (a & b): Urban Nature in Flux. As a partially restored wetland on the Maribrynong River, only 4 km from Melbourne's CBD, Newell's Paddock, Footscray, is a popular area for migratory birds and birdwatchers, fish and fishers, dogs and power walkers, weeds and litter. (a) This sign marks on one side, a narrow strip of gum trees and lawn and, (b) on the other, a wild, post-industrial open space where invaders and natives meet. [C Aidan Davison]

In his introduction to *Urban Wildlife,* journalist James Woodford (2004, iii) observes that every "Australian city has a wildlife underworld. A pumping, thumping ecosystem that exists in spite of and because of us. Nearly everyone I know has a brushtail possum story." While such stories are not new, Woodford observes their new significance as scientific and public interest in the ecological underworld of cities grows. Emotionally charged accounts of urban wildlife, such as this written for a general audience by zoologists studying Brisbane's microbats, are becoming common:

> Twilight in a lush, sub-tropical metropolis. The sweet ripeness of mangoes sharpens to a decaying stink; the last roosting calls of kookaburras and grey butcherbirds ripple through the heat; insects flitter around street-lights and through the long grass. Beneath wailing police sirens, whining mosquitos masquerade as Messerschmitts, penetrating evening sounds and socks and leaving a painful itch. Dark shapes gliding across the sky add their squawks and chattering to the evening cacophony…. [D]eep within the city's drains, hollow trees and house walls, another world of bats is stirring (Smith and Mathieson 2005, 14).

Enthusiasm for the wild underworlds of Australian cities is not limited to urban ecologists. The overwhelming response to the Australian Broadcasting Commission's (ABC) invitation to its public in April 2004 to imagine what might be learnt "if we all really looked at our own backyards - 20 million pairs of eyes across Australia looking at what's living there" (ABC n.d.), is particularly instructive. Over 5 weeks, more than 27 thousand people—the majority from cities and aged over 40—completed the first *WildWatch Australia* on-line survey, offering in the process thousands of stories of everyday encounters with urban wildlife. A second survey on backyard 'pests' in September 2004 saw 96 percent of respondents agree that it is important to protect native wildlife in their local area (ABC n.d.). The extent of this interest in 'backyard nature' may be linked—as both cause and effect—to an actual increase in some urban wildlife populations over the last few years. Whatever the reality, this is an idea with popular currency, with two weekly magazines in Melbourne running a cover story on 'The Return of the Natives' to the city (Murphy 2005).

While the purpose of the *WildWatch* surveys was to find out what 'wildlife' and 'pests' were up to in the environments in which humans live, it inevitably revealed a good deal about what humans were up to as well. So, for instance, despite official disapproval of this practice in Australia, the survey found that deliberate feeding of a variety of urban wildlife species is widespread. Some "40 to 60 per cent of people in any street anywhere are actively feeding wildlife," observed suburban ecologist Darryl Jones, one of the designers of the survey, indicating not only "the huge interest people have in urban wildlife" but also "a massive generational change" in attitudes (Jones cited in Murphy 2005, 9). The human motivations underlying this phenomenon have been the subject of little research, although Jones, in collaboration with Peter Howard (Howard and Jones 2004), and the National Parks and

Wildlife Service of New South Wales (NSW NPWS 2002), have begun to remedy this situation. It is clear that many people take pleasure from feeding wildlife and watching their behaviours at close range, although a desire to atone for environmental damage may be a significant motivation also. While it might be assumed that many people feed wildlife as a way of seeking ownership or control over them, Jones and Howard's (2004) study found a sense of empathy with wildlife to be more prevalent than a desire for control. The same study concluded that the 'knowledge-based' objectives of urban wildlife managers are likely to come into conflict with the 'experience-based' objectives of urban wildlife feeders. The authors conclude that as the fundamental causes of wildlife feeding are not passive ones, such as ignorance or habit, but are, rather, active and purposeful, it is unlikely to be effectively stopped by an education campaign designed to overcome an information deficit or by regulatory measures not accompanied by stringent policing. They thus conclude that "any attempts to raise levels of community knowledge that do not recognise the difference in the way knowledge is acquired may have little impact" (Howard and Jones 2004, 61).

Growing awareness of the extent and social significance of wildlife feeding adds weight to the proposition by Low that the "boundary between pet and wild creature" is being breached, mixing culture and nature together in novel and perplexing ways (Low 2002, 121). Another long-standing boundary being breached by new flows of public interest in cities is that between gardening discourse and ecological discourse. The ABC again provides a revealing example. The ABC is well aware that, while gardening remains the Australian recreation of first choice (Morgan-Poll 2001), it is being renegotiated as ideas of nature take on new cultural work in the context of public environmental concern about issues such as water management, climate change, pollution and invasive species. Thus, *Habitat Gardening*, an ABC Book, explains how to create "a garden that favours Australian native plants over plants from other countries, and Australian life forms and communities over those from any other place" (Grant 2003, 2). This eco-nationalist theme tightly joins ideas of nativeness and nation (Head and Muir 2004). It is a theme becoming more explicit in *Gardening Australia,* the ABC's popular television and magazine series. It is echoed in Archer and Beale's (2004, 318-9) injunction to Australians to 'go native' and transform "the urban gene pool" from "an alphabet soup of chaotically assembled ingredients" into cohesive native ecosystems. Such eco-nationalism rests on what Flannery in his 2002 Australia Day speech called an "environmental view of culture." This view gives rise to the hope "that this wide brown land might somehow claim us as its own…. [W]e must somehow come to terms with its conditions, to surrender our 'otherness' and therefore find our own distinctively Australian way" (Flannery 2002b, 5).

The convergence of an Australian preoccupation with gardening and themes of ecological responsibility and national distinctiveness is related to the under-researched but remarkable growth in local urban environmental 'care' groups over the last 15 years across metropolitan Australia (e.g., O'Bryne 2006). This growth has been driven by national policies—especially the National Heritage Trust (NHT) and associated funding mechanisms—that devolve responsibility for environmental management to voluntary community groups. Such groups are encouraged also by state and local government programmes, such as integrated biodiversity, catchment and coastal management and Local Agenda 21 planning, and by bodies such as the Urban Nature section of the WA Department of Conservation and Land Management. Motivated by a general concern to defend precolonial ecologies—that is, those ecosystems thought to have been in place at the time of European colonisation—against weedy invaders, and by a gardener's familiarity with weeding, these groups are 'reclaiming' and 'restoring' a variety of urban open spaces, from waterways and coastlines to remnant bushland and disused landfills. Urban landcare movements emulate earlier rural landcare movements, but differ from them in important ways; for instance, in their emphasis on public rather than private land and their often site-specific rather than catchment-based focus. Yet urban landcare movements remain largely undocumented in the Australian landcare literature which has focussed almost exclusively on rural communities (Lockie 2004; Wilson 2004). In addition, the actual ecological impacts and benefits of such community-based urban environmental management and research are poorly understood. Some conservation scientists argue that the funding of such groups has come at the expense of scientific research and that the work of such groups, while well-intended, is often misdirected, unscientific, poorly monitored and inadequately coordinated across ecologically meaningful scales (Lunney et al. 2002). This tension may reflect the ways in which such groups bundle together ecological interests with a raft of other implicit motivations. For instance, positive intent to remove environmental invaders may be, in part, fuelled by guilt over the colonisation of indigenous cultures and resultant uneasiness at the 'introduced' and 'invasive' status of non-Aboriginal Australians. Equally, positive desire to preserve local ecological distinctiveness may be fed by anxiety stemming from the erosion of local social distinctiveness by the intensifying flows of globalisation and resultant desire for new ways of belonging (Landstrom 2005; Lien 2006).

Debate about the ecological merits or otherwise of urban landcare groups returns us to the distinction between 'knowledge-based' and 'experienced-based' concerns about urban nature raised with respect to feeding of urban wildlife. While useful, this distinction needs to be used carefully so as to avoid a polarising and patronising distinction between expert and lay knowledge (Wynne 1992). For a start, the 'knowledge-based' concerns of urban environmental managers have folded into them important experiences and underlying emotions (e.g., Recher 2002). Equally, the 'experience-based' concerns of urban residents have their own sources of significant knowledge. Nor is it the case that the knowledge relied upon by managers is absolute, unchanging or uncontested from within science (Wallington et al. 2005). The popularity of Low's *The*

New Nature has ensured that a sizeable public audience in Australia is aware of debates among ecologists about the implications of anthropogenic disturbance and the relative importance of equilibrium and flux in the evolution of ecological systems. Low (2002, 57) revels in the task of demonstrating, with an exhaustive list of examples, that "nature is seldom as natural as we think." He unmasks Australian cities as "extraordinary places[,] … far more significant, ecologically, than most of us think" (Low 2002, 106). In so doing, he moves back and forth between knowledge and experience, opening the book with this acknowledgement of the lessons of everyday life:

> A brown snake visits my Brisbane garden. She's a metre long, sleek and shiny, with enough juice in her jaws to kill everyone in my street. I've seen her only five times in nine years, so I know she spends most of her days in other people's gardens… I say 'she' because I've sometimes found baby brown snakes gliding over my lawn. (I was snapped at in the laundry once. I think my doorstep was her hatchery) (Low 2002, 1).

Knowledge and experience are tightly interwoven in the concerns about urban nature held by conservation scientists, backyard wildlife feeders and ecological gardeners alike. This is not to deny that different forms of knowledge and experience are at stake or to suggest that these forms are necessarily of equal value in ecological or social terms. It is, however, to return to an awareness of the essentially contested nature of concerns about nature. It is to acknowledge that the science of nature conservation will not simply trump all other positions in public debates about nature on the basis of educating the public about 'the facts'. This is especially so in the case of urban nature conservation. The majority of Australians make their homes in cities and, understandably, a great many care deeply about what happens in and to their homes. Cities are dense tangles of different and often conflicting human interests, needs and desires. This complex human ecology is, from the beginning, inseparably entangled within profoundly complex more-than-human ecologies. The final section, then, considers the implications of social as well as ecological complexity for the practice of urban nature conservation.

III. The Urban Re-invention of Nature Conservation

In their content analysis of the journal *Conservation Biology*, Miller and Hobbs (2002) found that between 1995 and 1999 less than 6 percent of articles related to urban, suburban and peri-urban environments, prompting them to call for conservation where 'people live and work'. Michael Rosenzweig (2003, 7) has termed this new focus 'reconciliation ecology', or "the science of inventing, establishing, and maintaining new habitats to conserve species diversity in places where people live, work, or play." Australian conservation scientists are beginning to heed this call to facilitate a reconciliation of ecology and culture, accepting that their long-term objectives cannot be met unless nature conservation strategies are implemented, not only in sparsely populated reserves and depopulating rural environments, but also in the urban environments where over 85 percent of the human population live.

This increased emphasis on urban nature conservation in Australia is argued to have two chief benefits. First, nature conservation in and around cities will increase the total area of land dedicated to the objective of biodiversity conservation. Given that major settlements were generally founded in relatively fecund environments, cities may be in and near ecosystems of particular significance for biodiversity conservation. Second, public interest in the ecology of cities is cultivated by conservation professionals in the hope that connecting urban Australians more strongly with their everyday, backyard nature is the key to having them care about nature beyond the city limits.

The term biodiversity is a relatively recent one. Nonetheless, in less than 20 years biodiversity conservation has become a powerful and widely-known synonym for nature conservation (Takacs 1996). The underlying rationale of conservation biology, in particular, is that of maximising global biodiversity by conserving 'native' species populations and ecosystems. The methods employed to achieve this goal include: protecting relatively undisturbed areas from development; restoring disturbed areas; removing introduced, and especially invasive, species; and modifying human practices to aid the survival of native species. In Australia, biodiversity conservation is enshrined in the 1999 Federal *Environment Protection and Biodiversity Protection Act*, as well as in state legislation, planning schemes, grant assessment procedures and management plans. In addition, a heavy burden of values placed upon the idea of biodiversity stretches from the economic value of wild species and ecosystems, to aesthetic and recreational values, to spiritual and intrinsic values (Hunter 2002; New 2000).

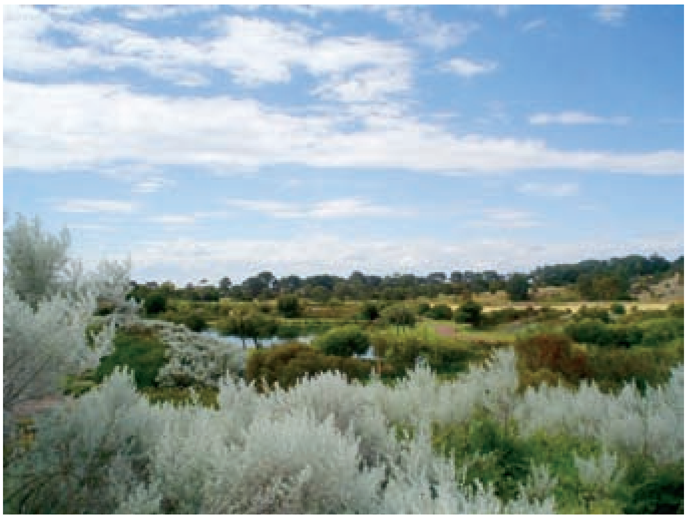

Figure 2. Entanglements of Ecology and Culture. Booyeembara Park, Perth. Where does nature end and culture start in a space like this one? This land in a suburb of Perth was quarried to provide limestone for the Port of Fremantle in the 19th century, then converted into a land-fill in the mid 20th century as Fremantle's early buildings were demolished. After decades of neglect and community debate, this area was re-developed in 1999 as an 'indigenous park', complete with a Nyungar (local aboriginal) name, a multi-million design by landscape architects, and a wetland and 'local' plant species installed by contractors. [C Brad Pettitt]

Interest in urban nature conservation is seeing the goal of biodiversity conservation extended to cities (Lunney and Burgin 2004b; McManus 2005). As Dan Lunney and Shelley Burgin (2004a, 3) explain, "the urban environment is the environment where so many people will form their ethic of care for our native fauna, concerns for the conservation of remnant bush and desire for the restoration of degraded habitats." Sue Briggs (2002) sees this process of reconnection as no less than the instilling of a new, ecology-centred ethic in place of the human-centred ethic that has dominated modern thinking about nature since the 17th century. Yet as this goal is brought into the everyday worlds in which most Australian's live, it is also coming under new forms of scrutiny, re-interpretation and challenge. The increasingly contested terrain of urban nature makes starkly evident the fact that there are many qualities in addition to a diversity of endemic species that people value in nature, particularly in their home environments.

Important in this regard is the finding that urban residents tend to partition the world into "areas that are 'right for humans' and areas that are 'right for animals'," distinguishing strongly between 'natural' and 'humanised' spaces (NSW NPWS 2002, 61). Focussing on suburban attitudes to trees rather than animals, Lesley Head and Pat Muir similarly found evidence of "a highly partitioned view of the world" in which native trees were often highly valued but their place was seen to be separate from home environments in which they were regarded as being in conflict with a territorial need for safety and sense of belonging (Head and Muir 2005, 94). Of course, what is being partitioned here are different kinds of animals, plants and landscapes. Despite the distinction often made by participants in these studies between 'natural' and 'human' environments, it is not clear that such partitioning is organised around a binary understanding of nature and culture. In addition to the unsettling of this binary evident in ecological gardening and wildlife feeding practices discussed earlier, consider also recent evidence that Australian's growing populations of companion animals are increasingly treated in significant ways as family members in Australian households, blurring boundaries between human and animal (Franklin 2006). Partitioning of home and world may be best understood, then, not as an attempt to hold culture and nature apart, but as an attempt to come into close contact with nature in distinct ways. The variety and complexity of values associated with backyard nature indicates that attempting to make people understand and care about "the large-scale problems facing nature conservation" by trying to bring "the problem home and get them where they live" (Mumbray 2001, 10) will be far from straightforward. It is worth remembering that, in the face of sustained education and media attention on environmental problems, the proportion of the Australian population claiming to be concerned about environmental problems has declined from 75 to 57 percent since the early 1990s (Australian Bureau of Statistics 2004).

The risks of overconfidence in the suitability of the concept of biodiversity as a foundation upon which to build urban nature conservation strategies can be seen in the 1996 'Chicago restoration controversy' (Gobster and Hull 2000). In this bitter conflict, anger erupted over restoration activities involving the clearance and burning of woodland on the urban periphery to restore pre-European prairies. Residents objected to the removal of trees, the possible harm to woodland animals, the loss of values associated with the existing woodland, fire hazard and air pollution resulting from burning, and the aesthetic impact of restoration activities. They were also angry at the lack of community consultation and participation in decision-making and frustrated that restorationists were claiming scientific authority to justify projects that many in the community saw as essentially grounded in aesthetic preference and political ideology. In addition, anti-restoration groups such as the Alliance To Let Nature Take Its Course objected to what they saw as artificial human intervention in natural processes.

While there may not have yet been urban restoration controversies of a similar scale to the Chicago controversy in Australia, local spats over matters such as the impact of companion animals on native animals, the presence of invasive species in plant nurseries and gardens, culling of animals for conservation purposes, the removal of established 'exotic' trees, the blocking of views by replanting of native vegetation, among many others, are common and, given the rise of movements such as urban landcare, likely to become more so. In this context, conservationists cannot simply assume that their objectives for nature match those of the wider public and that concern for nature in cities can be reduced to the denominator of biodiversity. Added to this is growing awareness from within scientific disciplines that the definition of and distinction between endemic and introduced species is not always clear cut (Low 2002) and the interaction between them "neither as simple nor as negative as commonly supposed" (Taylor et al. 2005, 473).

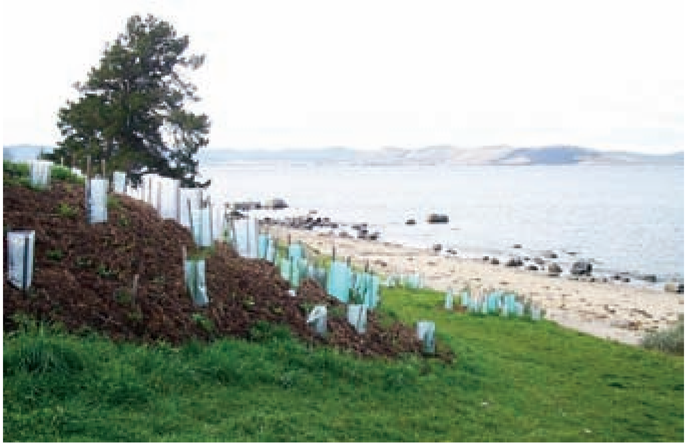

Figure 3. Repelling Invaders. Pine trees in the grounds of a high school and atop an aboriginal midden on the foreshore of the Derwent River, Hobart, are presently at the centre of heated dispute between members of the local community who claim them as cultural heritage and the local Landcare group that received Federal Government funding to restore the ecological values of the area and has recommended the school fell the trees. [C Aidan Davison]

There are a range of factors particular to urban nature that will ensure that the scientific authority of nature conservation professionals will continue to be tested and resisted, and increase the degree to which the assumptions, ethics and practices of conservation biology may themselves be destabilised by their interaction with the city. Most important is the intensity of feeling of urban residents for nature in their home environments; an intensity which stands in contrast to the passionately held but more abstract ideal of wilderness in urban consciousness. Another factor is the limited extent to which ecological and economic arguments concerning the value of biodiversity are applicable to urban nature. Arguments such as the need to maintain essential ecosystem services, the potential commercial value of species, and the link between biodiversity and ecosystem stability are, in many respects, of reduced relevance in urban contexts. Much urban nature consists of introduced species or relatively opportunistic and hardy natives that thrive either through their inherent capacity to co-exist with humans, or because of the active encouragement of particular habitats and valued species. What ecosystem services there are, such as shading, noise reduction, or stormwater management (Bolund and Hunhammar 1999), are provided not by a diversity of native species co-existing in relatively stable ecosystems, but by a mixture of endemic and introduced species whose co-existence is more opportunistic than evolved (Lerdau and Slobodkin 2002). Consequently, one of the central arguments for biodiversity conservation, namely, that the loss of any species might have grievous ramifications for the provision of ecosystem services and the maintenance of human prosperity (Ehrlich and Ehrlich 1982), may not be pertinent to many urban contexts. Similarly, the potential commercial value of rare species (Beattie and Ehrlich 2001) may not be a relevant consideration for urban nature conservation, in Australia, at least.

These observations lead to the conclusion that the principal justifications for adopting biodiversity conservation as a prime objective of urban nature conservation are aesthetic, moral and educational; the aesthetic value of greater species diversity, the moral distress associated with species extinction, and the educational possibilities entailed in connecting urban human populations with the full-range of native species. While they may share these values to some extent, this does not ensure that urban populations will feel motivated to maintain the full-range of native species in cities. As Stephen Kellert (1996, 62) notes, in the North American context,

> most Americans remain fixed on a narrow segment of the biotic community – largely vertebrate animals, particularly creatures of special historical, cultural, and aesthetic significance… A person's willingness to grant species ethical standing or other positive values appears to depend on the presumption of the species' sentience, intelligence, and behavioral features reminiscent of human experience.

Many conservationists view this situation with concern, and frequently call for programs to educate the public as to the importance of endemic biodiversity in the hope that incompatible attitudes toward nature can be weeded out. In this spirit, one author suggests that all Australians be assigned a 'biodiversity identity' at birth, consisting of three native species, to increase the depth of personal connection felt for indigenous flora and fauna (Ryan 2004). While some Australians will welcome such initiatives, it ought not be assumed that those that are less than enthusiastic do not have their own deep sense of connection to nature. Take the confession of Densey Clyne (1993, 111-112), a long-time and ecologically literate chronicler of suburban wildlife, that she 'rather likes' Indian myna birds, winners of the *WildWatch* 'Pest of Australia' award:

> Of course they shouldn't be here in Australia. It's more than likely they've displaced some native species around the suburbs by competing for food and nesting sites. But they are amiable and cheerful birds. And I write of wildlife in the suburbs not as it ideally should be, but as it is.

If the gross number of species is taken into account, Australia's suburban cities are sites of substantial species diversity (Taylor et al. 2005). This is not to deny that they were created by and are maintained by an unsustainable appetite for resources and an equally unsustainable production of waste that has reduced the geodiversity and biodiversity of vast hinterlands. Yet, as zoologist John McLoughlin (1978, x) put it, urban residents share their resource-rich urban home with all manner of creatures that may be possessed of "unspeakable toughness and resilience," potentially endowing every "nasty old shag rug" with a "fantastic underworld of animal life." There are reasons to hope, then, that even in the middle of the suburbs a more open-minded and open-hearted relationship with our cohabitants may offer "a new viewpoint from which to admire the gorgeous ballroom that is Earth" (McLoughlin 1978, x).

Wallington, Hobbs and Moore (2005) argue that, informed by recognition of the complex ecological consequences of human disturbance, nature conservation in any environment can no longer depend for its goals on the maintenance of 'natural' conditions. Such goals, especially in cities, must instead define desired forms of relationship between natural and cultural conditions. In so doing, nature conservation requires that ecological objectives be integrated with values deemed important by those human communities most directly affected by any particular nature management regime. This position questions the view that the primary responsibility of those charged with nature conservation is 'advocacy on behalf of biodiversity' (Wallington and Moore 2005). It suggests instead that urban nature conservation is primarily about the advocacy of particular forms or qualities of relationship between social and ecological systems, a mode of advocacy that requires as much expertise about and interest in a diversity of social values as about a diversity of ecological values.

IV. Conclusions

While it is necessary for a healthy, vital democracy that impassioned citizens campaign for public support for the protection of the things they care for, the reduction of values associated with urban nature to the common denominator of biodiversity may increase and deepen divisions within Australian society over the goal of urban sustainability. Alternatively, the recognition that cities are the scene of many complex, intense and heart-felt responses to the non-human world, both wild and domestic, native and exotic, suggests that nature conservation professionals may find unexpected overlap between their own sense of connection to nature and the feelings of those who do not necessarily share, at least at present, their conservation objectives. Rather than seeking to impose a biodiversity agenda as objective science while simultaneously manipulating public feelings of connection to nature so as to create political support for this agenda, nature conservation professionals might be better advised to accept and even welcome the plurality of values in 'nature' held within Australian society. This could be a starting point for building consensus and solidarity regarding the importance of ecological sustainability, and of reconciliation between ecology and settler culture in Australia, while allowing for different approaches toward this goal to be developed within different ecological and social contexts. Increasing engagement on the part of conservationists with these contested natures seems inevitable in the urban context where a diversity of interests, needs, desires and values ensure that the imposition of a single perspective will likely fail, and almost certainly fail the test of democratic process. The prospect that conservation management will itself become attuned to and responsive to social diversity and complexity as a result of this urban engagement seems as inescapable as it does welcome. It is a prospect that promises to increase the long-term social and ecological relevance and popular appeal of the conservation movement.

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